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Assistant Chief, Mediterranean Bureau 15 June 1948

Chief, FBIB

Your Letter of 2 June re Terminating Units for Wave Antennae

1. Procurement of transformers for the Beverage Wave Antennae of all of our new stations has reached an advanced stage. The transformers under procurement are very similar to those you requested per memo dated 2 June 1948.

2. The following variations in design are pointed out so that your antennae will be built to match the standard transformers.

a. Transformers are built to accomodate a 28 inch spacing of the two wires of the antenna. Fastening the wires on the inside of the pony type insulators mounted on pins spaced 30 inches on the cross arms furnished will give you the desired spacing.

b. Pole and cross arm construction should be such as to place the two wires of the wave antenna 16 1/2 feet above the ground level.

c. #10 copper wire was assumed in the calculation of the transformer impedances.

d. Reflection transformers are included for all wave antennae, whether or not a particular antenna is to be used for uni- or bi-directional reception. Since it is usually difficult to obtain a low resistance ground, particularly where surface conditions are dry and rocky, better overall response from the antenna is experienced when reflection transformers are used. Too often radial grounds become dry and act more like a capacity than a low resistance. The major disadvantages of this are overcome by use of a reflection transformer.

e. Ground connections from transformers to radial grounds will be made by using a piece of RG-12/U cable with appropriate fittings to match Amphenol 83-1R fitting on the transformer case. This feature will prevent downleads from acting as omnidirectional antennae to partly nullify directional characteristics of the wave antenna. The lighting arrestor and transformer case will be connected to the outer shield of the RG-12/U cable and the regular downlead and electrostatic shields will be connected to the inner conductor.

f. Each near end transformer case will be fitted with One End Seal, Navy Type RW-491567 and one threaded stud and cap. For attachment of a second end seal, the cap is unscrewed and the end seal attached.

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g. The line impedance of the transformers under procurement is 750 ohms and the termination impedance is 350 ohms. The impedance of windings for attachment to RG-85/U cable is 75 ohms.

3. Weatherproof cases are provided on all transformers. Both reflection and near end transformers have lightning arrester gaps. The range of the transformers is 200 to 2000 kcs.

4. In conjunction with this project you are being furnished eight kits (MK-1) for modification of CKB-50279 antenna multicouplers for use on medium and long wave-range 300 to 3000 kcs, impedance 75 ohms.

5. Two additional Navy Type RW-491567 end seals, ten adapters, Navy Type RW-491650 and fifteen 75 ohm, 2-watt resistors will be shipped as soon as they are procured. This is in addition to the eight reflection transformers and eight near-end combination transformers (with one end seal each). There may be a considerable delay in delivery of the RW-491652 adapters as the Navy is out of this item now.

L. K. WHITE

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